

Evergreen/East Hills Vision Strategy Transportation Analysis



***Presentation
Evergreen EIR
March 14, 2006***

Purpose of Traffic Impact Analysis (TIA)

- ***To Satisfy Transportation Policies***
 - *Traffic Level of Service Policy (5-3).*
 - *Area Development Policies*
 - *Congestion Management Program (CMP).*
 - *CEQA - Environmental Review*

- ***Determine Development Conditions***
 - *Traffic Impacts of future development.*
 - *Neighborhood issues*
 - *Status and condition of roadways, bicycle routes, transit.*
 - *Operational analysis.*

Citywide LOS Policy Summary

Traffic Level of Service Policy

- 1. Describe LOS congestion ratings (“A” through “F”) during AM and PM peak hour***

Traffic LOS Definition

- ***Measure of intersection traffic condition***



LOS "A"



LOS "C"



LOS "D"



LOS "F"

Citywide LOS Policy Summary

Traffic Level of Service Policy

- 1. Describe LOS congestion ratings (“A” through “F”) during AM and PM peak hour***

Citywide LOS Policy Summary

Traffic Level of Service Policy

- 1. Describe LOS congestion ratings (“A” through “F”) during AM and PM peak hour***
- 2. Establish LOS “D” as City wide goal (maximum congestion threshold)***
- 3. Require mitigation for significant LOS impacts (when impacts are greater than 1% and 4 seconds to LOS “E” and “F” intersections)***
- 4. Define “unacceptable” mitigation measures (impacts to pedestrian, bicycle and transit facilities)***

Determining Project Impacts

- ***Project assumptions***
- ***Peak Hour Analysis***
- ***Trip Generation, Trip Distribution***
- ***Existing traffic + Approved Trips = Background.***
- ***Background + Project traffic = determine impact.***
- ***Operational impacts.***
- ***Community, neighborhood issues.***

Definition of Significant Impact

- ***Significant impact:***
 - *From LOS “D” or better to LOS “E” or “F”.*
 - *At LOS “E” or “F”, increase critical volume by 1% and increase critical delay by 4 seconds.*
- ***If comparison of background to project exceeds threshold:***
 - *Considered significant environmental impact*
 - *Requires mitigation.*

EEHVS Traffic Analysis Overview

- ***Step 1: Development Proposal***
 - *Analyze multiple scenarios*
- ***Step 2: Trip Generation***
 - *Standard trip rates*
- ***Step 3: Trip Distribution***
 - *Traffic Forecast Model*
- ***Step 4: Congestion Analysis***
 - *Intersection Level of Service (LOS)*
 - *“A” through “F” ratings*
- ***Step 5: Freeway Analysis***



Evergreen Transportation Plan

- ***Base Improvements***
(Part of traffic analysis assumptions)
 - ***Freeway***
 - ***Street***
 - ***Intersections***

- ***Other Transportation Improvements***
 - ***Transit***
 - ***Bike/Ped Facilities***
 - ***Traffic Efficiency***
 - ***Traffic Calming***
 - ***Aesthetics/Landscaping***
 - ***Neighborhood Conveniences***



101 Improvements

Scope of Route 101 Projects

■ Yerba Buena Upgrade

- *Modify NB on-ramp*
- *Modify SB off-ramp*

■ Capitol Upgrade

- *“Partial Cloverleaf” Design*
- *Additional lanes*

■ Tully Upgrade

- *“Partial Cloverleaf” Design*
- *HOV bypass lanes*
- *Additional Storage Capacity*

■ 101 Widening

- *Add a SB lane between Story and Yerba Buena*
- *Add a SB auxiliary lane between Tully and Capitol*



Base Transportation Infrastructure

Table 11 Project-Sponsored Intersection Improvements	
Intersection	Intersection
5 US 101 and Capitol Expwy (E) (Fut)	33 White Rd and Tully Rd45
6 US 101 and Capitol Expwy (W) (Fut)	51 White Rd and Ocala Ave
7 US 101 and Tully Rd (E) (Fut)	52 White Rd and Cunningham Ave
8 US 101 and Tully Rd (W) (Fut)	53 White Rd and Lake Cunningham Park
12 McLaughlin Ave and Capitol Expwy	55 White Rd and Norwood Ave
13 Silver Creek and Capitol Expwy	56 White Rd and Quimby Rd
14 Capitol Expwy and Aborn Rd	57 White Rd and Stevens Ln
15 Capitol Expwy and Nieman Blvd	63 San Felipe Rd and Yerba Buena Rd (S)
16 Capitol Expwy and Quimby Rd	78 Silver Creek Rd and Yerba Buena Rd
26 King Rd and Tully Rd	87 Ruby Ave and Aborn Rd

Note: Study intersections that are not listed above have no planned improvements.

Intersection Impacts

Intersection Impacts

Project with Proposed Improvements

Intersection	Peak Hour	Background Scenario I		Scenario II		Scenario III		Scenario IV		Scenario V		Scenario VI	
		Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS
Silver Creek Rd and Capitol Expwy*	AM	50.8	D	62.9 E		63.8 E		64.4 E		67.4 E		48.3	D
	PM	51.5	D	51.4	D	51.6	D	51.8	D	52.6	D	50.9	D
Capitol Expwy and Quimby Rd*	AM	45.8	D	62.4 E		65.2 E		67.0 E		70.8 E		53.4	D
	PM	77.8	E	111.5 F		115.3 F		117.7 F		122.9 F		128.7 F	
Capitol Expwy and Ocala Av	AM	53.8	D	73.1 E		76.3 E		78.7 E		84.1 F		64.2 E	
	PM	51.9	D	53.8	D	54.2	D	54.5	D	54.9	D	55.2	E
Capitol Expwy and Story Rd*	AM	53.9	D	112.2 F		114.9 F		116.8 F		121.6 F		65.1 E	
	PM	53.6	D	71.9 D		74.8 E		76.5 E		79.3 E		62.7 E	
Capitol Expwy and Capitol Av	AM	25.3	C	35.0	C	36.9	D	38.2	D	41.8	D	26.7	C
	PM	53.1	D	68.1 E		69.5 E		70.3 E		71.9 E		57.6 E	
McLaughlin Av and Tully Rd*	AM	43.0	D	43.3	D	43.3	D	43.3	D	43.5	D	43.2	D
	PM	61.0	E	64.6 E		65.1 E		65.4 E		65.5 E		65.6 E	
San Felipe Rd and Yerba Buena Rd (S)	AM	78.3	E	34.7	C	35.0	C	35.2	D	36.9	D	79.6 E	
	PM	105.5	F	36.8	D	36.9	D	37.0	D	37.9	D	88.8	F
Nieman Blvd and Yerba Buena Rd	AM	51.4	D	32.0	C	32.0	C	31.9	C	32.2	C	67.6 E	
	PM	26.3	C	30.0	C	30.0	C	30.1	C	30.5	C	28.8	C

Notes:

Box indicates significant impact.

*Denotes CMP intersection

Mitigation Measures

Intersection	Recommended Mitigation	Improvement Required to Fully Mitigate Project Impact
Silver Creek Rd and Capitol Expwy*	None feasible.	Add 5th WB TH lane and 3rd EB LT lane on Capitol (and 3rd NB lane on Silver Creek to receive triple EBLT). Requires additional ROW (12' on east side of Silver Creek from Capitol to Aborn; 4-11' on north side of Capitol beginning east of Silver Creek to US 101). Adjacent commercial properties would lose some landscaping and parking due to ROW take.
Capitol Expwy and Quimby Rd*	Add NB RT lane and EB RT lane. Requires additional ROW (2' on south side of Quimby west of Capitol; 2' on east side of Capitol south of Quimby).	Same as recommended mitigation.
Capitol Expwy and Ocala Av	None feasible.	Add 4th NB TH lane. Requires additional ROW (11' on east side of Capitol north and south of Ocala). ROW take would involve purchase of 13 single-family homes.
Capitol Expwy and Story Rd*	None feasible.	Add 4th NB TH lane, free EB RT lane and free WB RT lane. Requires extensive ROW take (11' on east side of Capitol from Sussex to Story; 22' narrowing to 11' on east side of Capitol from Story to Capitol Avenue; 11' on west side of Capitol from Story for approximately 500'). Also requires converting Kollmar Drive into a cul-de-sac and shifting the Capitol Expwy frontage road farther east. ROW take would reduce landscaping and parking areas of adjacent commercial properties and require the demolition of at least 1 single-family residence and 1 church.
Capitol Expwy and Capitol Av*	None feasible.	Add 4th SB TH lane. Requires additional ROW (11' on west side of Capitol Expwy north and south of Capitol Av). Also requires shifting a segment of Capitol Avenue frontage road westward and demolishing 3 single-family residences.
McLaughlin Av and Tully Rd*	Add NB RT lane. Requires either acquisition of additional ROW (5' on east side of McLaughlin south of Tully) or narrowing sidewalk from 10' to 5' in front of corner parcel and eliminating plant strip in front of the adjacent parcel(s).	Same as recommended mitigation.
San Felipe Rd and Yerba Buena Rd (S)	None feasible.	Add 3rd EB TH lane. Requires widening the bridge over Thompson Creek.
Nieman Blvd and Yerba Buena Rd	Add 2nd WB LT lane within existing ROW. (<i>partial mitigation</i>)	Add 2nd NB LT and 2nd SB LT lane. Requires acquiring additional ROW and demolishing 5 single-family residences.

* Denotes CMP intersection.

101 Ramp Queue Results

Maximum Queue Length and Delay at Northbound U.S. 101 On Ramps – AM Peak Hour

	<u>WB Story Road</u>		<u>WB Tully Road</u>		<u>WB Capitol Expwy^a</u>		<u>Yerba Buena Road</u>	
	Queue Length (veh.)	Wait Time (min:sec)	Queue Length (veh.)	Wait Time (min:sec)	Queue Length (veh.)	Wait Time (min:sec)	Queue Length (veh.)	Wait Time (min:sec)
Existing Conditions	24	03:30	105	10:00	88	06:30	76	13:15
Background Conditions	25	03:45	48	04:30	50	03:45	79	13:45
Project Conditions								
Scenario II with Improvements	37	05:30	90	08:30	80	06:00	50	08:45
Scenario III with Improvements	39	05:45	92	08:45	80	06:00	53	09:15
Scenario IV with Improvements	40	06:00	94	09:00	81	06:00	55	09:45
Scenario V with Improvements	41	06:00	94	09:00	84	06:15	72	12:45
Scenario VI with Improvements	40	06:00	65	06:15	44	03:15	43	07:30

Notes:

Queue times were calculated using the surveyed existing (2004) queue lengths and estimated background and project trips, In combination with the future ramp meter rates obtained from the *Final Draft Traffic Operations Report—US 101 Operational Improvements from I-280/680 to Yerba Buena Road*, Fehr & Peers Associates, Inc., July 2005

^a The queue at Capitol Expressway includes both mixed-flow and HOV traffic.

101 Inbound Results

Table 24

Travel Times on Southbound U.S. 101 – PM Peak Hour

		<u>Project Conditions</u>			
	<u>Existing</u>	<u>Without Improvements</u>		<u>With Improvements</u>	
Route	Minutes	Minutes	% Change	Minutes	% Change
SB US 101 (n/o McKee Av) to SB US 101 (s/o Hellyer Av)	9.1	13.9	+53%	7.8	-14%
SB I-680 (n/o King Rd) to SB US 101 (s/o Hellyer Av)	8.7	11.9	+37%	8.0	-8%
EB I-280 (w/o McLaughlin Av) to SB US 101 (s/o Hellyer Av)	8.4	12.1	+44%	8.1	-4%

Source: *Final Draft Traffic Operations Report—US 101 Operational Improvements fro I-280/680 to Yerba Buena Road*, Fehr & Peers Associates, Inc. July 2005.

Evergreen/East Hills Vision Strategy Transportation Analysis



***Presentation
Evergreen EIR
March 14, 2006***